

(ii) Conformance with plans reviewed under § 160.135–9 of this subpart; and

(iii) Ease of operation and maintenance.

(e) *Test waiver.* The Commandant may waive certain tests for a lifeboat identical in construction to smaller and larger lifeboats that have successfully completed the tests. Tests associated with lifeboat components that have already been approved by the Commandant are not required to be repeated.

(f) At the request of the manufacturer and discretion of the Commandant, an independent laboratory may perform approval inspections and witness approval tests required by this section so long as the inspections and tests are performed and witnessed in accordance with the procedures agreed upon between the independent laboratory and Commandant under 46 CFR part 159, subpart 159.010.

(g) After completion of approval inspections and tests required by this section, the manufacturer must comply with the requirements of 46 CFR 159.005–9(a)(5) by preparing and submitting to the Commandant for review—

(1) The prototype approval test report containing the same information recommended by IMO MSC Circ. 980 (incorporated by reference, see § 160.135–5 of this subpart). The report must include a signed statement by the Coast Guard inspector (or independent laboratory as permitted by paragraph (f) of this section) who witnessed the testing, indicating that the report accurately describes the testing and its results; and

(2) The final plans of the lifeboat as built. The plans must include, in triplicate—

(i) The instructions for training and maintenance described in §§ 160.135–19 and 160.135–21 of this subpart; and

(ii) The final version of the plans required under § 160.135–9 of this subpart.

(h) The Commandant will review the report and plans submitted under paragraph (g) of this section, and if satisfactory to the Commandant, will approve the plans under 46 CFR 159.005–13.

§ 160.135–15 Production inspections, tests, quality control, and conformance of lifeboats.

(a) Unless the Commandant directs otherwise, an independent laboratory must perform or witness, as appropriate, inspections, tests, and oversight required by this section. Production inspections and tests of lifeboats must be carried out in accordance with the procedures for independent laboratory inspection in 46 CFR part 159, subpart 159.007 and in this section, unless the Commandant authorizes alternative tests and inspections. The Commandant may prescribe additional production tests and inspections necessary to maintain quality control and to monitor compliance with the requirements of this subpart.

(b) *Manufacturer's responsibility.* The manufacturer must—

(1) Institute a quality control procedure to ensure that all production lifeboats are produced to the same standard, and in the same manner, as the prototype lifeboat approved by the Commandant. The manufacturer's quality control personnel must not work directly under the department or person responsible for either production or sales;

(2) Schedule and coordinate with the independent laboratory (or Coast Guard inspector if required under paragraph (a) of this section) to ensure that all tests are performed as described in this section;

(3) Submit to the Commandant, a yearly report that contains the following—

(i) Serial number and date of final assembly of each lifeboat constructed;

(ii) Name of the representative of the independent laboratory (or Coast Guard inspector if required under paragraph (a) of this section); and

(iii) Name of the vessel and company receiving the lifeboat, if known; and

(4) Ensure that the arrangement and materials entering into the construction of the lifeboat are in accordance with plans approved under § 160.135–13(h) of this subpart;

(5) Allow an independent laboratory (or Coast Guard inspector if required under paragraph (a) of this section) access to any place where materials are stored for the lifeboat, work or testing

is performed on lifeboats or their component parts and materials, or records are retained to meet the requirements of paragraph (c) of this section, for the purpose of—

(i) Assuring that the quality control program of the manufacturer is satisfactory;

(ii) Witnessing tests; or

(iii) Taking samples of parts or materials for additional inspections or tests; and

(6) Ensure that the independent laboratory (or Coast Guard inspector if required under paragraph (a) of this section) conducts the inspections and witnesses the tests required by paragraph (e)(2) of this section, and further conducts a visual inspection to verify that the lifeboats are being made in accordance with the plans approved under § 160.135-13(h) of this subpart and the requirements of this subpart.

(c) *Recordkeeping.* The manufacturer must maintain records in accordance with 46 CFR 159.007-13. The manufacturer must keep records of all items listed in this section for at least 5 years from the date of termination of approval of each lifeboat. The records must include—

(1) A copy of this subpart, other CFR sections referenced in this subpart, and each applicable document listed in § 160.135-5 of this subpart;

(2) A copy of approved plans, documentation, and certifications;

(3) A current certificate of approval for each approved lifeboat;

(4) Affidavits, certificates, or invoices from the suppliers identifying all essential materials used in the production of approved lifeboats, together with records identifying the serial numbers of the lifeboats in which such materials were used;

(5) Start and finish date and time of the lay-up of each major Fiber Reinforced Plastic (FRP) component such as the hull, canopy, and inner liner and the names of the operator(s);

(6) Start and finish date and time of pouring of foam-in-place rigid buoyancy foam, and name of operator(s);

(7) Records of all structural welding and name of operator(s);

(8) Records of welder certificates, training and qualifications;

(9) Date and results of calibration of test equipment and the name and address of the company or agency that performed the calibration;

(10) The serial number of each production lifeboat, along with records of its inspections and tests carried out under this section; and

(11) The original purchaser of each lifeboat and the vessel on which it was installed, if known.

(d) *Independent laboratory responsibility.* The independent laboratory must perform or witness, as appropriate, the inspections and tests under paragraph (e)(2) of this section for each Coast Guard-approved lifeboat to be installed on a U.S.-flagged vessel. If the manufacturer also produces lifeboats for approval by other maritime safety administrations, the inspections may be coordinated with inspection visits for those administrations.

(e) *Production inspections and tests.* Each approved lifeboat must be inspected and tested in accordance with each of the following procedures:

(1) *In-process inspections and tests.* Each production lifeboat must be examined during lay-up of the hull to verify that the lay-up conforms to the approved drawings. Each FRP major component, such as the hull, canopy, and inner liner, must be examined and weighed after it is completed but before assembled. If the lifeboat is constructed by the spray lay-up technique, the hull and canopy thicknesses must be measured using ultrasonic or equivalent techniques. Laboratory tests of laminates must be conducted at this time. Test samples must be cut out from the lifeboat itself or be laid up at the same time, using the same procedures and by the same operators as the laminate used in the lifeboat. The number of samples used for each test, and the conditions and test methods used, must be as described in the applicable test specified in this paragraph.

(i) *Weight.* The weight of each FRP section, such as hull, canopy, and inner liner, must be within 10 percent of similar sections of the prototype lifeboat. These weights must be the bare laminate weights. Backing plates that are molded into the laminate may be included.

(ii) *Thickness.* The average thickness of each section of sprayed-up laminate must be within 20 percent of the corresponding sections of the prototype.

(iii) *Resin content.* Laminate samples from the hull, canopy, and inner liners must be tested in accordance with ASTM D 2584 or ISO 1172 (incorporated by reference, see §160.135-5 of this subpart). The resin content must be within 8 percentage points of the prototype results. If the resin content does not comply, flexural ultimate strength and tensile tests in paragraph (e)(1)(iv) of this section must be conducted.

(iv) *Flexural ultimate strength and tensile tests.* Each laminate sample from each major component, such as hull and liner, that does not comply with the resin content requirement in paragraph (e)(1)(iii) of this section, and from each component of every fifth production lifeboat, must be subjected to the flexural ultimate strength and tensile strength tests as described in §160.135-13(c)(2)(i)(B) of this subpart. The values must be at least 90 percent of the prototype results.

(v) *Buoyancy material.* If block foam buoyancy material is used, each piece must be weighed after it is cut and shaped to make sure that the correct amount of foam is installed. If foamed-in-place buoyancy material is used, a separate sample of the foam must be poured, and used to make a density determination after it has set. The density must be $32 \pm 8 \text{ kg/m}^3$ ($2 \pm 0.5 \text{ lb/ft}^3$).

(vi) *Steel sheet and plate.* Steel sheet and plate for the hull, floors, and other structural components must meet ASTM A 36 and ASTM A 653 as applicable (incorporated by reference, see §160.135-5 of this subpart). Non-corrosive resistant steel must meet the coating mass and bend tests requirement specified under ASTM A 653. Compliance for this paragraph can be ascertained through supplier's certification papers or through conducting actual tests.

(vii) *Cloth.* The cloth material used for the construction of each partially enclosed lifeboat must meet the material specification of A-A-55308 (incorporated by reference, see §160.135-5 of this subpart). This compliance can be ascertained through supplier's certification

papers or through witnessing actual tests.

(viii) *Fuel tank.* Each fuel tank must be tested by a static head above the tank top of 3 m (10 ft) of water without showing any leaks or signs of permanent distortion.

(ix) *Welding.* It must be determined that structural components joined by welding was performed by welders who are appropriately qualified and that the welding procedure and materials are as per the plans approved under §160.135-13(h) of this subpart.

(2) *Post assembly tests and inspections.* The finished lifeboat must be visually inspected inside and out. The manufacturer must develop and maintain a visual inspection checklist designed to ensure that all applicable requirements have been met and the lifeboat is equipped in accordance with approved plans. At a minimum, each lifeboat must be operated for 2 hours during which all lifeboat systems must be exercised.

§ 160.135-17 Marking and labeling.

(a) Each lifeboat must be marked with a plate or label permanently affixed to the hull in a conspicuous place readily accessible for inspection and sufficiently durable to withstand continuous exposure to environmental conditions at sea for the life of the lifeboat.

(b) The plate or label must be in English, but may also be in other languages.

(c) The plate or label must contain the—

(1) Name and address of the manufacturer;

(2) Manufacturer's model identification;

(3) Name of the independent laboratory that witnessed the prototype or production test and inspections;

(4) Serial number of the lifeboat;

(5) U.S. Coast Guard approval number;

(6) Month and year of manufacture;

(7) Material of hull construction;

(8) Number of persons for which the lifeboat is approved;

(9) Light load and full load (condition A and condition B weight); and

(10) Word "SOLAS."